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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Howard Scott Forstrom

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EDELL, SHAPIRO & FINNAN, LLC
1901 RESEARCH BOULEVARD
SUITE 400
ROCKVILLE, MD 20850

EXAMINER

SZYMANSKI, THOMAS M

ART UNIT

PAPER NUMBER

2134

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/30/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/028,727

Applicant(s)

FORSTROM ET AL.

Examiner

Thomas Szymanski

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3, 7-11, 18, 19, 21, 24-27, 32, 33, 35-41 and 43-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3, 7-11, 18-19, 21, 24-27, 32-33, 35-41, 43-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


KAMBIZ ZAND
PRIMARY EXAMINER

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 3, 7-11, 18-21, 24-27, 32-33, and 35-41, 43-50 have been examined.

Response to Arguments

2. Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.
3. In amending to avoid the current rejection the examiner respectfully suggests including within the independent claims the term watermarking or some equivalent in order to avoid other prior art references wherein identification data may be included as a token or separate frame within the stream and thus still teaching the claim limitation of not being combined with the header but within the data itself. Presently, the claim language does not necessitate watermarking as intended by the applicant since there is no recitation of such features and it has not been made clear that the media stream is contiguous as argued by the applicant in the current remarks. Additionally, further description of the changing of the attributes over time within the independent claims may help in overcoming the present rejection.

Claim Objections

4. Claims 35, objected to because of the following informalities:

Claim 35 line 20 recites "... attributes of the **the** first ..."

Claim 46 line 3 recites "... so that **it is** the signature information is imperceptible

..."

The above noted passages contain the highlighted typos.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 7-11, 18-19, 21, 24-27, 32-33, 35-40, and 44-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stone et al European Patent No. 1098522 (hereinafter "Stone"), further in view of Levy United States Patent Application Publication No. 2001/0044899 (hereinafter "Levy") and further in view of Kari et al Publication No. WO 97/48212 (hereinafter "Kari").

7. Stone teaches a method of watermarking a signal with a functional ID that refers to a set of attributes linked in meta-data but fails to disclose watermarking the signal with the specific attributes themselves.

8. Levy teaches transmission of multimedia signals wherein the signals are watermarked to be robust and compatible with many systems and wherein original out of band information, such as the meta-data taught by Stone, is included in a new watermark (Levy paragraphs 40-41).

9. Compatibility of media with legacy systems and the robustness of that media to be used on a variety of different systems is a desirable advantageous feature wherein a

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simple watermark may be used to employ such robustness (Levy abstract, paragraphs 6-10, 12-17).

10. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the systems of Levy and Stone for the advantages of increased compatibility as outlined above. The combination of these two systems comprises employing the system of Levy upon the watermarked media of Stone to achieve the improved watermarked media.

11. Stone and Levy teach a system for the watermarking of the actual content data stream and not header information based upon attributes of the data, but fails to teach the a second device configuring itself based upon the received attributes in the watermark.

12. However, Kari teaches a system (pg 4 lines 4-21) for the transmission of compressed data with an identifier for identification of one of a plurality of possible algorithms used to compress the given data stream, so that the receiving device may configure itself according to the compression imposed by the first device wherein the compression changes throughout transmission (on the fly) and thus the watermarked indicator changes as well. (Kari Fig 2a, pg 6 lines 9-14)

13. It is desirable within any system to provide for means of increased processing speed and efficiency while maintaining a high level of security. The implementation of such a system so as to avoid bottlenecks (Kari pg 1 lines 30-35) and maintain security is desirable.

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14. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the system of Kari with that of Stone and Levy for the advantages of improved transmission time and performance so as to avoid possible bottlenecks that may be encountered while maintaining the necessary security of the system through the implementation of a plurality of possible compression algorithms.

15. Regarding Claims 35, 36, 49-50: Generating at a first device signature information concerning the capabilities/attributes of the first device, wherein signature information may change over time with changes in the capabilities of the first device (Stone Fig 1, pg 2 lines 5-31, abstract, Levy Fig 1 paragraphs 12-13, 15-23, 25-29, 32, 34-41; Kari Fig 2a, pg 6 lines 9-14) The communication capabilities of the first device relate to the manner in which the media content is encoded and sent as related to specifications of the device and content. The combined reference teaches that information originally associated with the media is decoded and may be placed back into the media in a new format. This process then dictates that the information associated with the original watermark is recovered and placed into the new watermark that is combined with the stream so as to produce the more robust markings. As shown that information related to the original watermark specifies attributes of the first device that relate to its communication capabilities and furthermore the capabilities as taught by Kari wherein the compression algorithm is encoded for each frame and may change from frame to frame.

Inserting said signature information within a multimedia data stream after application layer processing but prior to network and transport layer processing that applies

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transport layer headers to the data stream, so as to produce a transmit data stream having the signature information embedded therein but not in the transport layer headers of the data stream (Stone pg 2 line 8, Levy Fig 1 paragraphs 12-23; Kari Fig 2a, pg 4 lines 4-21, pg 6 lines 9-14) As noted the device algorithm information is embedded within the data frames and not the header frames.

Transmitting the message to the second device (Levy Fig 1, Stone pg 3 lines 9-10, fig. 1 p717; Kari fig 2a)

Receiving the message from the first device (Stone Fig 1, pg 2 lines 11-14, Levy Fig 1)

Extracting said information from the message to determine the communication capabilities of the first device (Stone Table 1, Fig 1, pg 2 lines 5-14, Levy Fig 1, paragraph 26, 28-29, 36-41; Kari Fig 2a, pg 6 lines 9-14)

Configuring capabilities of the second device based on the capabilities and/or attributes of the first device (Stone Table 1, Fig 1, pg 2 lines 5-14, Levy Fig 1, paragraph 26, 28-29, 36-41; Kari Fig 2a, pg 6 lines 9-14) As noted the combinations provides for negotiating algorithms and/or other codecs being utilized.

Processing data stream frames received from the first device based on the capabilities configured for the second device (Stone Table 1, Fig 1, pg 2 lines 5-14, Levy Fig 1, paragraph 26, 28-29, 36-41; Kari Fig 2a, pg 6 lines 9-14)

16. Regarding Claims 3 and 9: the attribute is a type of voice recorder (vocoder), first device revision indicator, first device identifier (Stone Table 1, pg 2 lines 5-6, Levy Fig 1, para 12-23, 26, 28-29, 36-41) The separate parts of the label identify all of these

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features, furthermore, Levy provides for adding the same information in relation to the improved watermark.

17. Regarding Claim 7: At the first device, compressing the data stream according to a source compression algorithm, wherein said signature information identifies the source compression algorithm (Kari Fig 2a, pg 4 lines 4-21, pg 6 lines 9-14)

18. Regarding Claim 8: Generating a signature based on capability and applying as a watermark (Fig 1, pg 2 lines 5-15, Levy Fig 1, para 12-23, 26, 28-29, 36-41) as the applicant has acted as their own lexicographer to define a signature as defined in lines 7-8 of page 5 of the specification, Levy in this same manner provides for placement of the attributes within the data as a manner of watermarking the data.

19. Regarding Claim 10: applying the signature to masked non-critical fields (Stone pg 7 lines 16-19, 37-40, 47-54, Levy Fig 1, para 12-23, 26, 28-29, 36-41) Stone provides for embedding the watermark within the data so that it may be imperceptible as such not modifying any critical fields of data, further Stone states that the signature can be embedded within data fields of the given stream. The methods used to insert the watermark by way of it being imperceptible constitute a form of masking the data within the stream by applying the bits in a mask format to the data stream. Levy provides for leaving the original watermark in place (see paragraph 26) while applying the improved watermark as an imperceptible layer as discussed above.

20. Regarding Claim 11: Data stream includes header information and multimedia information and the watermark is contained in the multimedia content (Stone pg 7 lines 16-19, Levy Fig 1, paragraphs 7, 16, 18-20, 35-38, 41) As stated by Stone the

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watermark may be contained within the multimedia content. In accordance with compatibility of a newly placed watermark the Levy system is governed by the manner in which the original watermark was placed as related by the attributes.

21. Regarding Claim 18: At the second device, comparing the capabilities and/or attributes of the first device with the capabilities and/or attributes of the second device (Stone Fig 1, pg 2 lines 11-14, Levy Fig 1, paragraph 36; Kari Fig 2a, pg 6 lines 9-14)

As is necessary within any such system for the basic functionality to be possible there is a means for the reception and use of the produced data within which the system functions as necessary within all basic features such as determination and negotiation of the protocols necessary for the produced data. Such steps are necessary for the decryption and implementation to be viable, otherwise the system would not function upon the initial method.

22. Regarding Claims 19, 21: At the second device determining a communication capability attribute common to both the first device and the second device based on said comparing; Recovering from the received message said data stream based on the parameter (Levy Fig 1, paragraphs 36, 15-23, 25-29, and 34-41; Stone Fig 1, pg 2 lines 11-14; Kari Fig 2a, pg 6 lines 9-14) Parameters such as decryption keys or compression algorithms that are implemented require an equivalent parameter.

23. Regarding Claims 37-40, 46, : The method of claim 35, wherein said inserting comprises substituting a plurality of bits representing said information for the least significant bits of linear prediction compression coefficients associated with audio content contained in said multimedia data stream; a jitter index, the least significant bits

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of a gain index, the least significant bits of Fourier Magnitudes; or the least significant bits of reflection bits, associated with a compression technique for audio content contained in said multimedia data stream; substituting a plurality of bits representing said information for the least significant bits of unrestricted motion vectors and Discrete Cosine Transform (DCT) coefficients associated with motion video content contained in said multimedia data stream; substituting a plurality of bits representing said information for the least significant bits of the quantized Discrete Cosine Transform (DCT) coefficients associated with still images contained in said multimedia data stream (Levy paragraphs 18-21, 24, 37) As recited by Levy the watermark is placed into the characteristics of the data to facilitate the imperceptibility of the mark. Levy states that by modifying such attributes as perceptual domain attributes and/or transform domain frequency coefficients the embedding may take place. As seen from the recitation of Levy in the cited passages the intent is to embed the watermark with minimal impact on the perceptibility by inserting it in the exact same manner as disclosed above.

24. Regarding Claim 44, 45: configures capabilities of the second device to match the capabilities and/or attributes of first device to highest common denominator of capabilities between the first device and the second device (Stone Table 1, Fig 1, pg 2 lines 5-14, Levy Fig 1, paragraph 26, 28-29, 36-41; Kari Fig 2a, pg 6 lines 9-14)

25. Regarding Claims 47, 48: at the first device generating comprises changing the signature information depending on whether the capabilities of the first device change with time (Kari pg 4 lines 4-21, page 6 lines 9-14)

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26. Claims 24-27, 32-33, and 36 are a system implementation of the above recited method and are rejected on the same grounds.

27. Claims 41 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stone, Levy, and Kari as applied to claim 35 above, and further in view of Fujiwara United States Patent No. 6,731,776 (hereinafter "Fujiwara").

28. The combination above teaches a system for embedding watermarks but fails to explicitly teach embedding the watermarks using a logical or operation.

29. However, in related art, Fujiwara teaches a system of embedding watermarks using a logical or operation, wherein the Fujiwara system advantageously performs high speed watermarking without unduly increasing memory requirements (Col 1 line 65 – Col 2 line 20). Such a system is advantageous for outputting watermarks in a more efficient manner than previously described.

30. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine Stone, Levy, and Kari with Fujiwara for the above stated advantages.

31. Regarding Claim 41, 43 (new): Combining comprises logically OR'ing said information with the multimedia data stream at bit positions of the multimedia data stream chosen to have minimal impact on quality of the multimedia data stream at the second device.

Conclusion

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is reminded that in amending in response to a rejection of claims, the patentable novelty must be clearly shown in view of the state of art disclosed by the references cited and the objections made. Applicant must show how the amendments avoid such references and objections. See 37 CFR 1.111(c).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas Szymanski whose telephone number is 571-272-8574. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kambiz Zand can be reached on 571-272-3811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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[Signature]
KAMBIZ ZAND
PRIMARY EXAMINER